

WHAT IS CLAIMED IS:

1. A guide wire to assist percutaneous endovascular deployment,
the guide wire having zones of varying stiffness comprising:
 - an elongate central zone of high stiffness;
 - 5 a proximal zone of transition from high stiffness to semi-stiffness; and
 - a distal zone of transition from high stiffness to being relatively flexible.
2. A guide wire as in claim 1 wherein the distal zone comprises three
10 zones:
 - a semi stiff zone adjacent the central zone;
 - a transition zone being of flexibility of from semi-stiff extending to flexible; and
 - a tip zone being of high flexibility.
- 15 3. A guide wire as in claim 1 wherein the central zone comprises a stainless steel mandrel of substantially constant diameter along its length.
4. A guide wire as in claim 1 wherein the proximal zone comprises a tapered mandrel with a proximal wire coil on and extending along the tapered mandrel.
- 20 5. A guide wire as in claim 4 wherein the proximal coil is of substantially constant coil diameter.
6. A guide wire as in claim 4 wherein the proximal coil is tapered.

7. A guide wire as in Claim 4 wherein the proximal wire coil is laser welded to the tapered mandrel.
8. A guide wire as in Claim 4 wherein the proximal wire coil terminates in a rounded tip.
- 5 9. A guide wire as in Claim 1 wherein the distal zone comprises in order from the central zone, a tapered mandrel portion and a portion of constant reduced diameter with a distal wire coil on and extending along the tapered mandrel portion and the portion of constant reduced diameter.
- 10 10. A guide wire as in claim 9 wherein the distal coil is of substantially constant coil diameter.
11. A guide wire as in Claim 9 wherein the distal wire coil is laser welded to the tapered mandrel portion.
12. A guide wire as in Claim 9 wherein the distal wire coil terminates in a rounded tip.
- 15 13. A guide wire as in Claim 1 wherein the distal end of the guide wire has a distal curve with a radius of curvature of from 50 to 150 mm.
14. A guide wire as in Claim 2 wherein the distal end of the guide wire has a curve with a radius of curvature of from 50 to 150 mm and wherein the distal curve includes a portion of the central zone, the semi stiff zone adjacent the central zone and a portion of the transition zone.
- 20 15. A guide wire as in Claim 2 wherein the tip zone has a tip curve with a radius of curvature of from 5 to 20 mm.

16. A guide wire to assist percutaneous endovascular deployment comprising:
- a mandrel of substantially constant diameter along its length in a central zone;
 - 5 a proximal portion of the mandrel having a proximal tapered portion with a proximal wire coil on and extending along the proximal tapered portion;
 - a distal portion of the mandrel comprising in order from the central zone; and
 - 10 a distal tapered portion and a portion of constant reduced diameter with a distal wire coil on and extending along the distal tapered portion and the portion of constant reduced diameter.
17. A guide wire as in Claim 16 wherein the diameter of the mandrel in the central zone, the coil diameter of the proximal wire coil and the coil diameter of the distal wire coil are of substantially equal.
18. A guide wire as in Claim 16 wherein the central zone, the proximal wire coil and the distal wire coil are coated with polytetrafluoroethylene.
19. A guide wire as in Claim 16 wherein each of the proximal wire coil and the distal wire coil terminate in a rounded tip.
20. A guide wire as in Claim 16 wherein the distal end of the guide wire has a large curve with a radius of curvature of from 50 to 150 mm.
21. A guide wire as in Claim 16 wherein a tip of the distal end of the guide wire has a J curve with a radius of curvature of from 5 to 20 mm.

22. A guide wire for a medical device, the guide wire having a proximal end and a distal end and being of a type which is relatively stiff intermediate the distal end and the proximal end and having more flexible proximal and distal tips.
- 5 23. A guide wire as in Claim 21 wherein the more flexible proximal and distal tips are tapered towards their respective ends to facilitate deployment.
24. A guide wire as in Claim 21 further including a pre-formed bend adjacent the distal end.
- 10 25. A guide wire as in Claim 21 wherein the distal tip is formed into a part circular shape or pigtail.
26. A guide wire as in Claim 21 wherein the proximal tip is formed into a rounded shape.
- 15 27. A guide wire as in Claim 21 manufactured from stainless steel or nitinol.
28. A guide wire as in Claim 21 wherein at least some portions of the guide wire are radio-opaque.
29. A guide wire as in Claim 21 wherein the distal tip is radiopaque.
- 20 30. A guide wire for a medical device, the guide wire having a proximal end and a distal end and being of a type which is relatively stiff intermediate the distal end and the proximal end and having tapered and more flexible proximal and distal tips.

31. A guide wire as in Claim 30 further including a pre-formed bend adjacent the distal end.

32. A guide wire as in Claim 30 wherein the distal tip is formed into a part circular shape or pigtail.

5 33. A guide wire for assisting the deployment of an endovascular device, the endovascular device having a guide wire catheter through which the guide wire is inserted in use, the guide wire having a proximal end and a distal end and being relatively stiff intermediate the distal end and the proximal end, the guide wire having more flexible proximal and
10 distal tips, a pre-formed bend adjacent the distal end to assist with deployment of the deployment device into portions of the vasculature which are already curved such as the thoracic arch, the distal tip being formed into a part circular shape or pigtail to assist with preventing damage to vasculature as the device is deployed and the proximal tip
15 being formed into a rounded shape to assist with insertion through the guide wire catheter of the endovascular device.

34. A guide wire as in Claim 33 wherein one or both of the more flexible proximal and distal tips are tapered towards their respective ends to facilitate deployment.